

(12) United States Patent Han et al.

(10) **Patent No.:**

US 9,636,317 B2

(45) **Date of Patent:**

May 2, 2017

(54) COMPOSITIONS AND METHODS OF USE OF PHORBOL ESTERS

(71) Applicant: Biosuccess Biotech Co. Ltd., Santa

Clara, CA (US)

Inventors: **Zheng Tao Han**, Zhengzhou (CN); (72)

Hung-Fong Chen, Taipei (TW)

Assignee: Biosuccess Biotech Co. Ltd., Santa

Clara, CA (US)

(*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 93 days.

(21) Appl. No.: 14/027,320

(22)Filed: Sep. 16, 2013

(65)**Prior Publication Data**

> US 2014/0017196 A1 Jan. 16, 2014

Related U.S. Application Data

- Continuation-in-part of application No. 13/745,740, filed on Jan. 18, 2013, which is a continuation-in-part of application No. 12/023,753, filed on Jan. 31, 2008, now abandoned, application No. 14/027,320, which is a continuation-in-part of application No. 13/745,745, filed on Jan. 18, 2013, and a continuation-in-part of application No. 13/745,742, filed on Jan. 18, 2013, and a continuation-in-part of application No. 13/794,467, filed on Mar. 11, 2013, which is a continuation of application No. 13/595,072, filed on Aug. 27, 2012, now abandoned, which is a continuation of application No. 12/023,753, filed on Jan. 31, 2008, now abandoned.
- Provisional application No. 61/588,162, filed on Jan. 18, 2012, provisional application No. 61/588,165, filed on Jan. 18, 2012, provisional application No. 61/588,167, filed on Jan. 18, 2012, provisional application No. 61/898,810, filed on Jan. 31, 2007.

(51)	Int. Cl.	
	A61K 31/23	(2006.01)
	A61K 31/21	(2006.01)
	A61K 31/216	(2006.01)
	A61K 31/235	(2006.01)
	A61K 31/225	(2006.01)
	A61K 45/06	(2006.01)
	A61K 31/573	(2006.01)
	A61K 31/603	(2006.01)
	A61K 31/22	(2006.01)
	A61K 31/381	(2006.01)
	A61K 31/55	(2006.01)

(52) U.S. Cl.

CPC A61K 31/225 (2013.01); A61K 31/216 (2013.01); A61K 31/22 (2013.01); A61K 31/381 (2013.01); A61K 31/55 (2013.01); A61K 31/573 (2013.01); A61K 31/603 (2013.01); **A61K 45/06** (2013.01)

(58) Field of Classification Search

CPC ... A61K 31/216; A61K 31/22; A61K 31/381; A61K 31/55; A61K 31/225; A61K 31/573; A61K 31/603; A61K 45/06

See application file for complete search history.

(56)References Cited

U.S. PATENT DOCUMENTS

6,063,814	A *	5/2000	Chang et al 514/510
6,080,784	A		Driedger et al.
6,184,248	B1	2/2001	Lee et al.
6,268,395	B1	7/2001	Hattori
2007/0009529	A1	1/2007	Karpatkin
2007/0066684	A1	3/2007	Mori et al.
2008/0226589	A1	9/2008	Han
2011/0034425	A1	2/2011	Strair
2011/0243917	A1	10/2011	Cheong et al.
2011/0245307	A1	10/2011	Alkon

FOREIGN PATENT DOCUMENTS

CN	101667542	3/2010
EP	1230925	8/2002
EP	1589026	10/2005
EP	2030631	3/2009
EP	2170053	4/2010
EP	2368555	9/2011
JP	2001131075	5/2001
JP	2005179201	7/2005
JP	2008069182	3/2008

(Continued)

OTHER PUBLICATIONS

Albrecht et al., "Chapter 44 Effects on Cells," In Baron S, editor. Medical Microbiology. 4th edition. Galveston (TX): University of Texas Medical Branch at Galveston; 1996 (Available from: http:// www.ncbi.nlm.nih.gov/books/NBK7979/).

(Continued)

Primary Examiner — Savitha Rao (74) Attorney, Agent, or Firm — Sughrue Mion, PLLC

(57)ABSTRACT

Methods and compositions containing a phorbol ester or a derivative of a phorbol ester are provided for the treatment of chronic and acute conditions. Such conditions may be caused by disease, be symptoms or sequelae of disease. Chronic and acute conditions may be due to viral infections such as HIV and AIDS, neoplastic diseases stroke, kidney disease, urinary incontinence, autoimmune disorders, Parkinson's disease, prostate hypertrophy, aging, or the treatment of such diseases. Additional compositions and methods are provided which employ a phorbol ester or derivative compound in combination with at least one additional agent to yield more effective treatment tools against acute and chronic conditions in mammalian subjects.